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| APPLICATION NO.            | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|---------------------|------------------|
| 10/521,726                 | 04/18/2005  | Francois Aeby        | MAI-NITI            | 2234             |
| 23439                      | 7590        | 08/20/2008           | EXAMINER            |                  |
| DENTSPLY INTERNATIONAL INC |             |                      | MENDEZ, ZULMARIAM   |                  |
| 570 WEST COLLEGE AVENUE    |             |                      |                     |                  |
| YORK, PA 17404             |             |                      | ART UNIT            | PAPER NUMBER     |
|                            |             |                      | 1795                |                  |
|                            |             |                      | MAIL DATE           | DELIVERY MODE    |
|                            |             |                      | 08/20/2008          | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/521,726             | AEBY ET AL.         |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | ZULMARIAM MENDEZ       | 1795                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 18 January 2005.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 7-12 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 7-12 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 04/18/2005.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 7, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang et al. (US Patent no. 6,375,826).

With regard to claim 7, Wang discloses electro-polishing stems manufactured from nickel-titanium alloys (col. 1, lines 6-9) comprising: providing an electrolyte including sulfuric acid and methanol (col. 5, lines 50-52); and applying electricity having a current density that is regulated so that it remains constant (col. 2, lines 54-58).

With regard to claim 10, the process of Claim 7, wherein said electricity is supplied by a power supply (20) to a cathode (16) and anode/stent (18, see figure 1) and wherein said cathode (16) is formed by at least one platinum electrode (col. 4, lines 16-19) and said anode is formed by nickel-titanium alloy (col. 3, lines 60-61).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 9 and 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al, as applied to claim 7 above.

With regard to claim 9, Wang discloses wherein said electrolyte is a mixture of methanol and sulfuric acid, comprising between 5% to 15%wt (~0.05 to 1.5 moles of H<sub>2</sub>SO<sub>4</sub>; col. 5, lines 50-52). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

With regard to claim 11, Wand further discloses wherein the stents (18) are stirred in said electrolyte at a stirring rate that is about 3.14 mm/s to 16.75 mm/s. An explanation on how the examiner achieved this conclusion is as follows:

Wang discloses wherein the stent, having a diameter of 8mm (col. 5, line 63), is rotated from 5 to 20 times during the polishing process (col. 6, lines 16-17) and it was polished for about 15-80 seconds (col. 6, line 15). Therefore:

a. The circumference of the stent is first obtained:

$$C = 2\pi r = (2)(3.1416)(8\text{mm}) = 50.24\text{mm}$$

b. When the stent is rotated 5 times (x) during the process for a period of time (t):

> when  $t = 15$  seconds:

$$\frac{C * x}{t} = \frac{(50.24\text{mm}) * 5}{15\text{sec}} = 16.75 \text{ mm/s}$$

> when  $t = 80$  seconds:

$$\frac{C * x}{t} = \frac{(50.24\text{mm}) * 5}{80\text{sec}} = 3.14 \text{ mm/s}$$

Therefore, the stirring rate of the stent in the electrolyte ranges between 3.14 to

$16.75 \text{ mm/s}$  when it is rotated 5 times for 15 and 80 seconds.

6. Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang, as applied to claim 7 above, in view of Piotrowski (Electro-polishing of Titanium and Titanium alloys in Perchlorate free electrolytes, May 1998).

With regard to claim 8, Wang discloses all of the method steps as applied to claim 7 above, but fails to teach wherein the current density is between about 10 A/dm<sup>2</sup> and 30 A/dm<sup>2</sup> and wherein the stents to be treated are made of a titanium alloy having at least 40% by weight of titanium.

Piotrowski discloses for treating titanium and titanium alloys in sulfuric acid and methanol mixture (page 115, first column, first paragraph) the process is performed applying a current density of  $0.2 \text{ A/dm}^2$  (page 117, second column) in order to diminish the heating of the anode surface. Therefore, one having ordinary skill in the art at the time of the invention would have found it obvious to modify the current density, as taught by Piotrowski, in the electro polishing process of Wang, in order to diminish the heating of the anode surface.

With regard to claim 12, Wang discloses all of the method steps as applied to claim 7 above, but fails to teach wherein the stents to be treated are made of a titanium alloy having at least 40% by weight of titanium. Piotrowski discloses for treating titanium and titanium alloys in sulfuric acid and methanol mixture (page 115, first column, first paragraph) wherein titanium alloys having 99.6%, 89% and 86% of Titanium were used because of its good chemical properties such as good corrosion resistance, chemical inertness they found numerous applications in the chemical process industry and for medical implants (page 115, first column, second paragraph). Therefore, one having ordinary skill in the art at the time of the invention would have found it obvious to use a titanium alloy with the composition, as taught by Piotrowski, in the electro-polishing process of Wang, because of titanium's good chemical properties, such as good corrosion resistance, and chemical inertness among others, it finds numerous applications in the chemical process industry and for medical implants.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZULMARIAM MENDEZ whose telephone number is (571)272-9805. The examiner can normally be reached on Monday-Thursday, 8:30am-5:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Z. M./  
Examiner, Art Unit 1795

/Cynthia H Kelly/  
Supervisory Patent Examiner, Art Unit 1795

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Art Unit: 1795

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